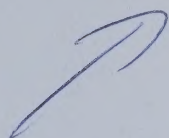


AR18

# Annual Report 1969

FIVE





# Northern Electric Company, Limited

Montreal, Canada

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*Si vous désirez une version  
française de ce rapport,  
veuillez en faire la demande  
au service des relations  
publiques de la Compagnie  
Northern Electric, Limitée,  
case postale 6123,  
Montréal, Qué.*



# Northern Electric Company, Limited

## Directors

G. Maxwell Bell  
Chairman of the Board  
F.P. Publications Ltd.

Paul Bienvenu  
Director  
Ogilvie Flour Mills Company Limited

Georges L. Demers, Q.C.  
President  
Sterling Securities Corporation

Arnold J. Groleau  
Executive Vice-President  
Bell Canada

\*R. Holley Keebler, C.B.E., D.S.O.

Herbert H. Lank  
Director  
Du Pont of Canada Limited

\*Alexander G. Lester  
Executive Vice-President  
Bell Canada

\*Vernon O. Marquez

J. Angus Ogilvy, Q.C.  
Senior Partner  
Ogilvy, Cope, Porteous, Hansard,  
Marler, Montgomery & Renault

Charles Perrault  
President and General Manager  
Casavant Frères Ltée.

\*Gérard Plourde  
President  
U.A.P. Inc.

Robert C. Scrivener  
President  
Bell Canada

\*Marcel Vincent  
Chairman of the Board  
Bell Canada

\*Edward C. Wood  
Chairman of the Board  
Genstar Limited

*\*Members of the Executive Committee*

## Officers

**Chairman of the Board**  
R. Holley Keebler

**President**  
Vernon O. Marquez

**Vice-Presidents**  
Wilfred D. E. Anderson  
General Manager, Switching

Charles T. Ball  
Distribution Sales

Quentin R. Ball  
General Manager, Apparatus

Gaston R. Boyer  
Treasurer

Ewart O. Bridges  
Corporate Planning

Donald A. Chisholm  
Research and Development

John R. Houghton  
Manufacturing and Engineering

Kenneth S. Hoyle  
Technology Planning

J. Bruce Hutchinson  
General Manager, Transmission

W. Ritchie Johnston  
Switching Marketing

Raymond C. Smythe  
Personnel

C. Beverley Woodley  
Switching Manufacturing

Kenneth H. Woodley  
General Manager, Wire and Cable

**Comptroller**  
W. Leonard Glasspoole

**Corporate Secretary**  
John G. Harper

# Northern Electric Company, Limited

## Consolidated Results in Brief

|                               | 1969          | 1968          |
|-------------------------------|---------------|---------------|
| Sales .....                   | \$482,523,000 | \$426,272,000 |
| Net Earnings .....            | 10,976,000    | 9,387,000     |
| Net Earnings Per Share .....  | 6.75          | 6.42          |
| Dividends .....               | 10,563,000    | 9,506,000     |
| Dividends Per Share .....     | 6.50          | 6.50          |
| Capital Expenditures .....    | 24,239,000    | 12,412,000    |
| Working Capital .....         | 147,611,000   | 119,733,000   |
| Employees (31 December) ..... | 26,025        | 23,682        |

## Report of the Directors to the Shareholders for the Fifty-sixth Year of Operations Ended 31 December 1969

Growth and change marked the Company operations in the year 1969. Consolidated sales for the year were \$482,523,000, an increase of 13% over 1968.

Consolidated net earnings for the year were \$10,976,000, compared with \$9,387,000 in 1968, a gain of 17%.

This earnings improvement in 1969 was achieved by the significantly increased profitability of our main telecommunications business offsetting a net loss in the Company's new subsidiary, Microsystems International Ltd., in which substantial development and start up costs were written off.

While productivity improvement combined with higher volume partially counteracted the increase in labour and material costs, the year's consolidated results still fall short of a reasonable return on investment being obtained.

The decade just ended witnessed the increase of Company sales from \$250 million in 1960 to \$483 million in 1969. To meet the challenge of the next decade of planned growth, demanding greater product innovation and widening international acceptance of the Company's products, three major steps were undertaken:

1. In April 1969, the structure of the Company was reorganized to establish the following Divisions —

Switching  
Apparatus  
Transmission  
Wire and Cable  
Distribution Sales  
International Operations  
Turkish Operations

2. A new subsidiary, Microsystems International Ltd., was created in March 1969 to spearhead the entry of semiconductor and miniature high quality integrated circuit products into world markets.

3. Clearly defined objectives were established for divisions and subsidiaries. Intensified business planning, operations review and management development programs were introduced to ensure that the advantage of the new organization would be felt before the end of 1969 in anticipation of the 1970's.



## Research and Development

Head of Laboratories  
D. A. Chisholm

The Research and Development Laboratories continued systematic expansion of facilities and development of capabilities to serve expanding telecommunications markets in Canada, the U.S. and abroad.

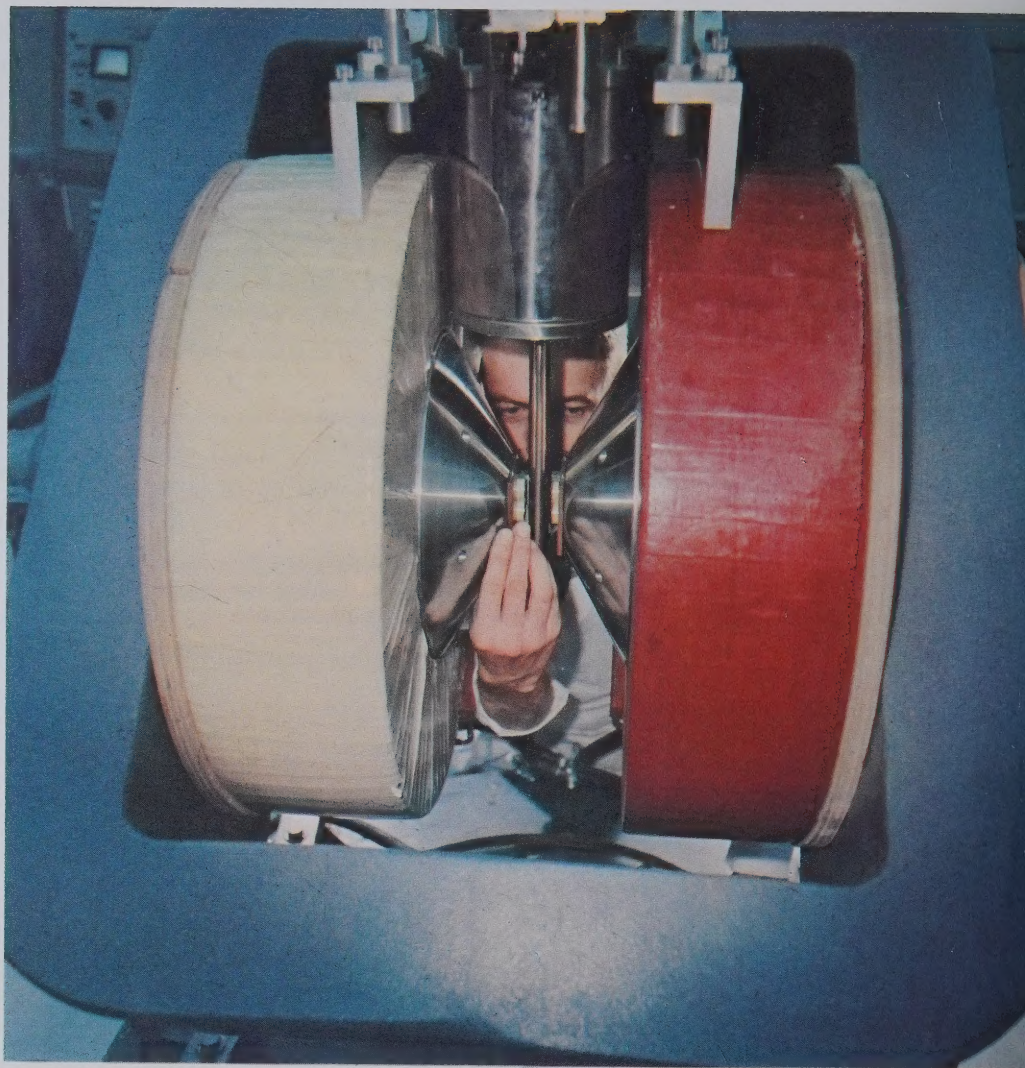
A new transmission and aerospace laboratory was established at Kanata, a short distance from the laboratories at Ottawa, to centralize microwave, multiplex and aerospace systems development.

Aerospace development continued on the design of antenna and transponder assemblies for Canadian and international satellite communications systems.

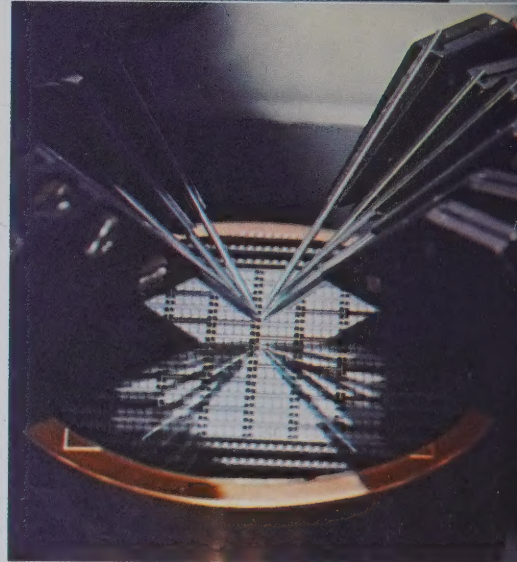
Ground station development progressed on schedule with the installation at the Ottawa laboratories of a television reception earth station designed to receive synchronous satellite color television signals in remote areas.

During 1969, three major products — the MA-5 export multiplex, the SP-1 electronic central office and the SE-2 common control PABX — progressed from the final phases of development to experimental use, field trial or production.

Exploratory research in cable, micro-circuits, electronic telephone networks, tone ringers and acoustic devices produced further advancement in the development of the next generation of outside plant and customer apparatus.

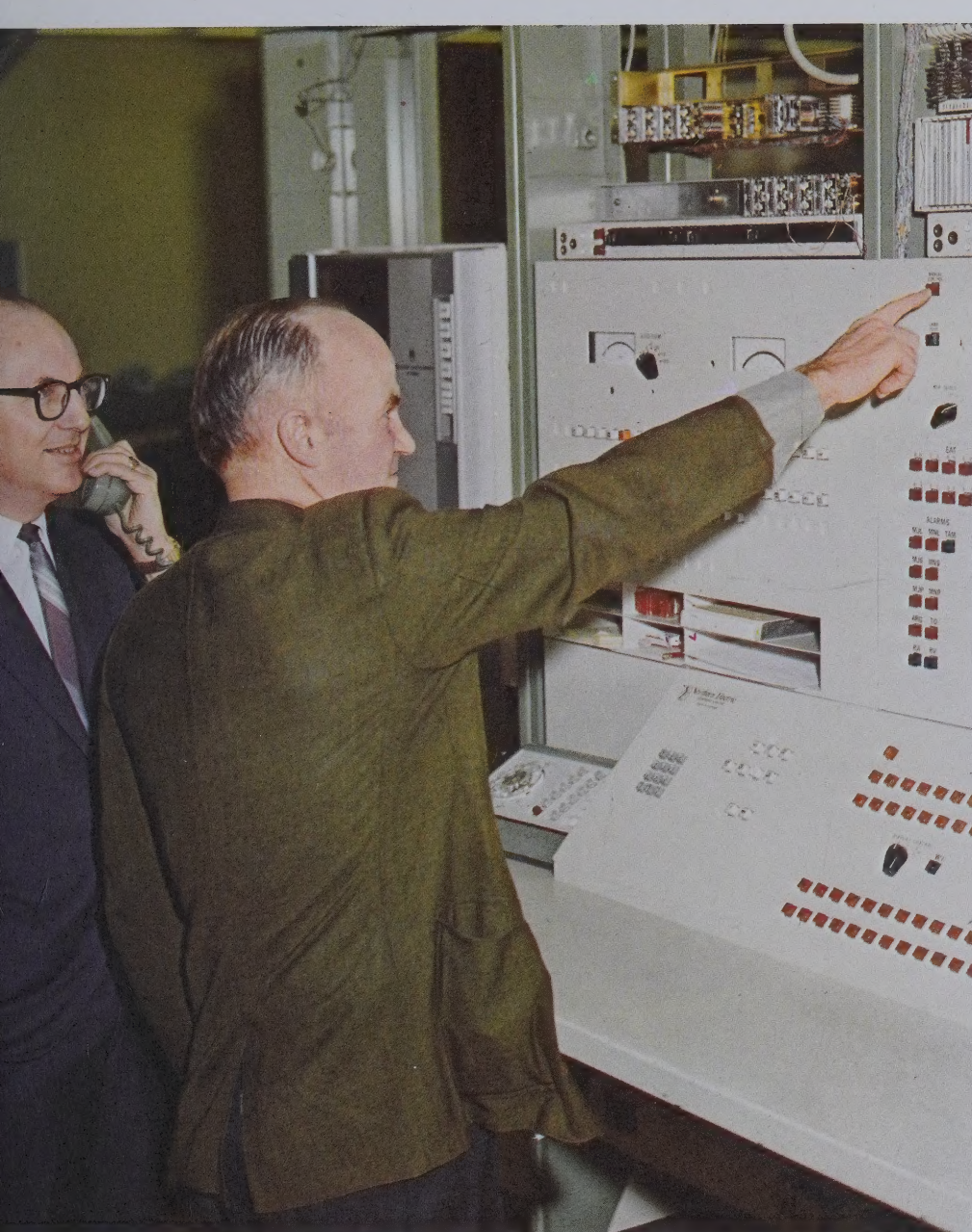


A large electromagnet, 20,000 times more powerful than the magnetic field at the earth's surface, tests the electrical characteristics of advanced components for communications systems.



Greatly magnified, integrated circuits fabricated on a silicon slice are tested by multi-probe apparatus, before encapsulation.





With the push of a button and the traditional first telephone call, Vice-Presidents J. A. McCutcheon of Bell Canada (left) and D. A. Chisholm of Northern Electric Research Laboratories, place the SP-1 electronic switching system into field service trial near Ottawa.

## Switching

Head of Division  
W. D. E. Anderson

Strategic selection of research and development in the past five years has expanded Northern Electric's switching systems capability to meet the demands of the major segments of North American and international markets.

The SF-1 crossbar switching system, initially developed to serve international markets and installed in Kenya in 1968, was also placed in service in Uganda, the Philippines, United States and Canada in 1969. This system offers smaller population centres those service features previously available only in large switching systems. The new MINIBAR\* switch, compact plug-in line circuit cards and visual fault displays have contributed to the wide acceptance of the SF-1.

In November 1969, the SP-1 electronic switching system, the first Canadian-designed system with full stored programme control, began field service trials in Bell Canada's Britannia office, near Ottawa. The SP-1 will provide the new versatile customer service features of the coming era.

The continuing capability of the NE-5 crossbar to satisfy the requirements of large, complex telephone switching systems and provide modern service such as Centrex and DIGITONE\* dialing contributed to increased sales volume.

Innovation in the approach of the manufacturing, industrial engineering and quality control team to the production of the component parts of these complex switching systems resulted in significant improvement in reliability through quality assurance and in the achievement of cost reduction goals.

*\*Trademark of Northern Electric Co. Ltd.*



## Apparatus

Head of Division  
Q. R. Ball

Continuing high demand for customer premises equipment and outside plant increased the sales of the Apparatus Division substantially.

The London plant worked at close to full capacity, producing a high volume of telephone sets (including the new CONTEMPRA\* telephone), call directors, buried cable terminals and telephone booths. The new export telephone set specifically constructed for tropical environments is now being introduced in offshore markets.

Employment at the Belleville plant increased to meet the growing requirement for coin telephones, outside plant and PABX equipment. The new SE-2 Common Control Automatic Branch Exchange and the new pay station conversion unit, permitting free emergency calls, were successfully introduced in 1969.

*\*Trademark of Northern Electric Co. Ltd.*



The widely accepted, award-winning Contempra\* telephone is now being installed in increasing numbers in Canada and in export markets.



Using only a single slot, which accepts 5, 10, and 25 cent coins, Northern's new pay telephone complements the latest architectural trends.





## Transmission

Head of Division  
J. B. Hutchinson

Progress in product research and manufacturing capability during 1969 further enhanced the market outlook of the Transmission Division.

Early in the year production started on a new MA-5, 2700 voice circuit frequency division multiplexing system, developed to meet the requirements of international and domestic markets.

Manufacture of satellite transponders for the world-wide Intelsat communications system is well advanced under subcontract from Hughes Aircraft Company. These satellite units are processed in the rigidly controlled environmental conditions of the Belleville "clean room". This manufacturing capability is ready to produce the requirements of other satellite systems such as those of Canada's Telesat system.

A rugged TVRO (television receive-only) station, incorporating many Northern Electric design innovations, was constructed and installed at the Ottawa transmission laboratory to receive color television from a synchronous satellite. Using a pre-stressed support structure and dispensing with automatic tracking mechanism and radome protection, the 25-foot diameter antenna dish has proven economical to manufacture and performs reliably under extreme cold weather conditions.

The TVRO  
(television receive-only)  
station at Ottawa.



## Wire and Cable

Head of Division  
K. H. Woodley

The Wire and Cable Division experienced accelerated growth with production nearing maximum capacity. Both export and domestic cable sales reached record levels.

New machinery was installed to provide improved facilities for the manufacture of premium quality insulants, such as SUPERTHERMALENE\*, capable of operation at voltages up to 69000.

A molded-shell coaxial cable, NE-174, went into production to meet more exacting demands of modern communication applications.

Faced with an acute copper shortage from domestic sources during the latter part of the year, the Division was forced to purchase on the international market to meet customer commitments.

\*Trademark of Northern Electric Co. Ltd.



Stranding coaxial cable around a core of telephone wires is checked to exacting specifications.



NE-174 coaxial cable used for medium and short-haul transmission.





## Distribution Sales

Head of Division

C. T. Ball

Distribution Sales Division continued to increase sales volume in 1969 as a result of improved customer service facilities, selectively broadened product lines and increased penetration of the market through 35 strategically located distribution centres across Canada.

The branch at Trois-Rivières, Quebec moved to new enlarged facilities. A new branch was opened in Kitimat, B.C. and plans were prepared for another distribution centre to open early in 1970, at Mississauga, Ontario.

Northern's new distribution centre is opened by Mayor René Matteau (cutting ribbon) in a ceremony attended by (left to right) Jean-Paul Gailloux, Eastern Zone Manager; V. O. Marquez, President; C. T. Ball, Vice-President; and Curé Emile Clément.



## International Operations

Head of Division  
J. W. Halina

Sales to the international market in 1969 increased 35% over 1968. Business continued to accelerate in Nigeria, Greece and the Caribbean.

In Latin America, the Company was awarded its first major contract for the supply and installation of a transmission project in Chile. Extending over 350 kilometers, the network will provide telephone and television transmission between the capital cities of four provinces in south-central Chile.

As one of the country's increasingly active exporters of manufactured products, the Company further advanced its teamwork with the Canadian Export Development Corporation and the Canadian International Development Agency in promoting Canadian products and services to developing countries.

During the year A. C. Kovats, who originally organized the International Operations Division, retired. His untiring efforts contributed substantially to the Company's rapid and successful penetration of international markets.



Barbados Telephone Company technician works with a Northern Electric installer performing final tests on equipment in a new telephone exchange.



J. W. Halina, Director of International Operations, reviews an overseas transmission project with sales, engineering and marketing management.





R. H. Keefer, Chairman of the Board, watches Prime Minister Demirel of Turkey cut a ribbon to officially open the plant in Istanbul.

## Turkish Operations

Head of Division

R. K. Eadie

The Turkish Operations Division was formed in November to concentrate management attention on the growing manufacture and sales activities of the Company in Turkey. The Division will be the main point of liaison with Northern Electric Telekomünikasyon A.Ş. in which Northern Electric has 51% ownership, the balance being held by The Post, Telegraph and Telephone Administration of the Republic of Turkey.

In May, the Prime Minister of Turkey, Süleyman Demirel, accompanied by the Chairman of the Board of Northern, officially opened the Northern Electric Telekomünikasyon A.Ş. plant. Attending this function were several Northern Electric Directors who had taken part in a meeting of the Board in Istanbul — the first such meeting to take place outside of Canada.

This modern facility in Istanbul, manned by personnel trained in both Turkey and Canada, achieved forecast production rates by year end. Under the guidance of Northern's Canadian staff, the supervision and manufacturing services functions are being turned over to capable employees recruited and trained in Turkey.

Turkish installers completed thirteen central office exchanges providing service to additional subscribers in Istanbul, Ankara and Ismir.



Directors and Officers

During the course of the year the following officers retired from service with the Company:

J. G. Little, Executive Vice-President and Director; F. F. Fulton, Vice-President, Administration; N. H. Martin, Vice-President and Treasurer; A. C. Kovats, Vice-President, International Operations.

Your Directors have recorded deep appreciation for the valuable contributions of these officers during their many years with the Company.

The retirement of these officers and the reorganization of the Company structure resulted in new responsibilities for other existing officers and the appointment of C. T. Ball as Vice-President, Distribution Sales; Q. R. Ball, as Vice-President and General Manager, Apparatus Division; E. O. Bridges as Vice-President, Corporate Planning; D. A. Chisholm as Vice-President, Research and Development; K. S. Hoyle as Vice-President, Technology Planning; K. H. Woodley as Vice-President and General Manager, Wire and Cable Division; and W. L. Glasspoole as Comptroller.

Charles Perrault, of St. Hyacinthe, Quebec, was elected to The Board of Directors, filling the vacancy created by the retirement of J. G. Little.

Employees

The employee population increased during the year to 26,025. Total employment costs were \$205,123,000 for the year. Included in this total are the following supplementary employee benefits:

|                           |             |
|---------------------------|-------------|
| Payments to Pension       |             |
| Trust Fund .....          | \$8,099,000 |
| Payments to Government    |             |
| Pension Plans .....       | 2,036,000   |
| Sickness and Accident     |             |
| Benefits .....            | 2,113,000   |
| Death Benefits .....      | 410,000     |
| Disability Pensions ..... | 49,000      |

The Works Councils, established last year to serve as a forum for improved communications among employees and to stimulate awareness of the community of interest we all share, have been of significant value in this year of reorganization.

In presenting this report, your Directors wish to acknowledge the effort of the men and women within Northern Electric who contributed so much to the results achieved.



Development, training and information programs are video taped at Northern Electric for closed circuit television presentation to employees.

For the Directors,

*W. L. Glasspoole*  
Chairman.

*C. T. Ball*  
President.

20 February 1970.



# Northern Electric Company, Limited

## Consolidated Statement of Earnings

for the Year Ended 31 December 1969

(with comparative figures for the year ended 31 December 1968)

|                                                                                                           | 1969<br>(thousands of dollars) | 1968<br>(thousands of dollars) |
|-----------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|
| Sales .....                                                                                               | \$482,523                      | \$426,272                      |
| Cost of Sales including Selling and<br>General Administrative Expense .....                               | 432,594                        | 388,329                        |
| Earnings from Operations before<br>deducting Research and Development Expense .....                       | 49,929                         | 37,943                         |
| Research and Development Expense (Notes 2 and 10) .....                                                   | 25,933                         | 21,744                         |
|                                                                                                           | 23,996                         | 16,199                         |
| Income from Investments .....                                                                             | 151                            | 119                            |
|                                                                                                           | 24,147                         | 16,318                         |
| Interest Charges                                                                                          |                                |                                |
| Debentures .....                                                                                          | 2,157                          | 2,279                          |
| Bank and Other .....                                                                                      | 1,477                          | 402                            |
|                                                                                                           | 3,634                          | 2,681                          |
| Earnings before Underlisted Items* .....                                                                  | 20,513                         | 13,637                         |
| Provision for Income Taxes (Note 3) .....                                                                 | 9,845                          | 5,621                          |
|                                                                                                           | 10,668                         | 8,016                          |
| Minority Interest in Net Loss of<br>Subsidiary Company .....                                              | 308                            | 465                            |
| Earnings before Extraordinary Item .....                                                                  | 10,976                         | 8,481                          |
| Extraordinary Item (Note 4) .....                                                                         | —                              | 906                            |
| Net Earnings for the Year .....                                                                           | \$10,976                       | \$ 9,387                       |
| *After deducting the following                                                                            |                                |                                |
| Depreciation on Plant and Equipment .....                                                                 | \$10,534                       | \$ 9,865                       |
| Remuneration paid to Directors,<br>including Salaries to Directors<br>who are also Company Officers ..... | 287                            | 268                            |



**Consolidated Balance Sheet as at 31 December 1969**  
(with comparative figures as at 31 December 1968)

|                                                                        | <b>Assets</b> | 1969<br>(thousands of dollars) | 1968             |
|------------------------------------------------------------------------|---------------|--------------------------------|------------------|
| <b>Current</b>                                                         |               |                                |                  |
| Cash .....                                                             |               | \$ 508                         | \$ 435           |
| Accounts Receivable                                                    |               |                                |                  |
| Affiliated Companies .....                                             |               | 29,562                         | 25,926           |
| Other .....                                                            |               | 58,010                         | 42,718           |
| Property Held for Sale, under<br>leaseback arrangements, at cost ..... |               | —                              | 693              |
| Inventories (Note 5) .....                                             |               | 137,362                        | 106,983          |
| Prepaid Expense .....                                                  |               | 1,384                          | 924              |
|                                                                        |               | <u>226,826</u>                 | <u>177,679</u>   |
| <br><b>Plant and Equipment</b> (Notes 6 and 10)                        |               |                                |                  |
| Land and Buildings .....                                               |               | 49,852                         | 46,522           |
| Machinery and Equipment .....                                          |               | 165,017                        | 147,940          |
|                                                                        |               | <u>214,869</u>                 | <u>194,462</u>   |
| Less: Accumulated Depreciation .....                                   |               | 115,465                        | 108,339          |
|                                                                        |               | <u>99,404</u>                  | <u>86,123</u>    |
| <br><b>Total Assets</b> .....                                          |               | <u>\$326,230</u>               | <u>\$263,802</u> |

On behalf of the Board of Directors:

V. O. Marquez, Director

Paul Bienvenu, Director



**Northern Electric Company, Limited**  
(Incorporated in 1914 under the Canada Corporations Act)

|                                                           | <b>Liabilities</b> | 1969<br>(thousands of dollars) | 1968             |
|-----------------------------------------------------------|--------------------|--------------------------------|------------------|
| <b>Current</b>                                            |                    |                                |                  |
| Due to Banks .....                                        |                    | \$ 29,035                      | \$ 13,349        |
| Notes Payable                                             |                    |                                |                  |
| Affiliated Company .....                                  |                    | —                              | 5,000            |
| Other .....                                               |                    | 230                            | 265              |
| Accounts Payable and Accrued Liabilities                  |                    |                                |                  |
| Affiliated Companies .....                                |                    | 622                            | 640              |
| Other .....                                               |                    | 39,478                         | 31,696           |
| Taxes Payable .....                                       |                    | 7,862                          | 5,008            |
| Sinking Fund Deposits due within one year (Note 7) .....  |                    | 1,988                          | 1,988            |
|                                                           |                    | <u>79,215</u>                  | <u>57,946</u>    |
| <b>Loan Payable</b> (Note 8) .....                        |                    | 859                            | —                |
| <b>Long-Term Debt</b> (Note 7) .....                      |                    | 41,000                         | 43,000           |
| <b>Deferred Income</b> .....                              |                    | —                              | 1,478            |
| <b>Deferred Income Taxes</b> .....                        |                    | 23,262                         | 15,298           |
| <b>Minority Interest in Subsidiary Company</b> .....      |                    | 1,491                          | 1,090            |
|                                                           |                    | <u>145,827</u>                 | <u>118,812</u>   |
| <b>Shareholders' Equity</b>                               |                    |                                |                  |
| <b>Capital Stock</b> (Note 9)                             |                    |                                |                  |
| Authorized — 2,250,000 Shares of no par value             |                    |                                |                  |
| Issued — 1,812,500 Shares (1,462,500 Shares — 1968) ..... |                    | 113,975                        | 78,975           |
| <b>Retained Earnings</b> .....                            |                    | 66,428                         | 61,715           |
| <b>Reserve for Pensioners' Death Benefits</b> .....       |                    | —                              | 4,300            |
|                                                           |                    | <u>180,403</u>                 | <u>144,990</u>   |
| <b>Total Liabilities and Shareholders' Equity</b> .....   |                    | <u>\$326,230</u>               | <u>\$263,802</u> |

W. L. Glasspoole, C.A., Comptroller



# Northern Electric Company, Limited

## Consolidated Statement of Retained Earnings

for the year ended 31 December 1969  
(with comparative figures for the year ended 31 December 1968)

|                                                           | 1969<br>(thousands of dollars) | 1968<br>(thousands of dollars) |
|-----------------------------------------------------------|--------------------------------|--------------------------------|
| Balance at Beginning of Year as previously reported ..... | \$62,918                       | \$58,616                       |
| Less: Adjustment of Prior Years' Earnings (Note 10) ..... | 1,203                          | 682                            |
| Balance as restated .....                                 | 61,715                         | 57,934                         |
| Net Earnings for the Year .....                           | 10,976                         | 9,387                          |
| Transfer of Contingency Reserve .....                     | —                              | 3,900                          |
| Transfer of Reserve for Pensioners' Death Benefits .....  | 4,300                          | —                              |
|                                                           | 76,991                         | 71,221                         |
| Deduct: Dividends paid .....                              | 10,563                         | 9,506                          |
| Balance at End of Year .....                              | <u>\$66,428</u>                | <u>\$61,715</u>                |

## Consolidated Statement of Source and Application of Funds

for the year ended 31 December 1969  
(with comparative figures for the year ended 31 December 1968)

|                                                  | 1969<br>(thousands of dollars) | 1968<br>(thousands of dollars) |
|--------------------------------------------------|--------------------------------|--------------------------------|
| <b>Source of Funds</b>                           |                                |                                |
| Operations:                                      |                                |                                |
| Net Earnings .....                               | \$10,976                       | \$ 9,387                       |
| Add: Charges not requiring an outlay of funds    |                                |                                |
| Depreciation .....                               | 10,534                         | 9,865                          |
| Deferred Income Taxes .....                      | 7,964                          | 4,254                          |
| Other .....                                      | 134                            | 203                            |
|                                                  | 29,608                         | 23,709                         |
| Less: Reduction in Deferred Income .....         | 1,478                          | —                              |
|                                                  | 28,130                         | 23,709                         |
| Loan Payable .....                               | 859                            | —                              |
| Issue of Capital Stock .....                     | 35,000                         | —                              |
| Minority Interest in Subsidiary Company .....    | 401                            | 248                            |
| Investment in Associated Company .....           | —                              | 290                            |
|                                                  | <u>\$64,390</u>                | <u>\$24,247</u>                |
| <b>Application of Funds</b>                      |                                |                                |
| Expenditures for Plant and Equipment (Net) ..... | \$23,949                       | \$12,283                       |
| Reduction in Long-Term Debt .....                | 2,000                          | 2,000                          |
| Dividends Paid to Shareholders .....             | 10,563                         | 9,506                          |
| Increase in Working Capital .....                | 27,878                         | 458                            |
|                                                  | <u>\$64,390</u>                | <u>\$24,247</u>                |



## Notes to the Consolidated Financial Statements

31 December 1969

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|--------------|
| <b>Note 1 Basis of Reporting</b>                                                             | The consolidated financial statements include the accounts of all subsidiary companies with provision made for the interest of a minority shareholder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |             |              |
| <b>Note 2 Research and Development Expense</b>                                               | This is after deducting amounts claimed for current expenditures under the Industrial Research and Development Incentives Act. Also deducted are Canadian Government conditional grants to Microsystems International Ltd. amounting to \$2,756,000 (see Note 13).                                                                                                                                                                                                                                                                                                                                                                                                 |              |             |              |
| <b>Note 3 Provision for Income Taxes</b>                                                     | Possible future reductions in income taxes relating to losses carried forward in certain subsidiary companies have not been taken up in the accounts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |             |              |
| <b>Note 4 Extraordinary Item</b>                                                             | Income tax reductions realized on the carry-forward of a loss.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |             |              |
| <b>Note 5 Inventories</b>                                                                    | Inventories are valued at the lower of cost and net realizable value except for copper in raw material and in work-in-process which is valued on a base-stock method.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |             |              |
| <b>Note 6 Plant and Equipment</b>                                                            | This is stated at cost less amounts claimed for general purpose plant and equipment under the Industrial Research and Development Incentives Act. Also deducted are Canadian Government conditional grants to Microsystems International Ltd. amounting to \$913,000 (see Note 13).                                                                                                                                                                                                                                                                                                                                                                                |              |             |              |
| <b>Note 7 Long-Term Debt</b>                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |
|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1969         |             | 1968         |
| 4½ % Sinking Fund Debentures due 1 November 1976                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |
| Authorized and Issued .....                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \$20,000,000 |             | \$20,000,000 |
| Less: Redeemed Under Sinking Fund Provisions .....                                           | \$9,000,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              | \$8,000,000 |              |
| Debentures held for Sinking Fund Instalments due 1 November 1970 and 1969 .....              | 12,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              | 12,000      |              |
| Sinking Fund Instalments included in Current Liabilities due 1 November 1970 and 1969 .....  | 988,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10,000,000   | 988,000     | 9,000,000    |
|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10,000,000   |             | 11,000,000   |
| 5½ % Sinking Fund Debentures 1962 Series due 15 December 1982                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |
| Authorized and Issued .....                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20,000,000   |             | 20,000,000   |
| Less: Redeemed Under Sinking Fund Provisions .....                                           | 3,000,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | 2,000,000   |              |
| Sinking Fund Instalments included in Current Liabilities due 15 December 1970 and 1969 ..... | 1,000,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4,000,000    | 1,000,000   | 3,000,000    |
|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 16,000,000   |             | 17,000,000   |
| 6¼ % Sinking Fund Debentures Series C due 15 April 1986                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |
| Authorized and Issued .....                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15,000,000   |             | 15,000,000   |
|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \$41,000,000 |             | \$43,000,000 |
| <b>Note 8 Loan Payable</b>                                                                   | The loan payable represents an interest free loan to Microsystems International Ltd. from the Canadian Government for the provision of equipment (See Note 13).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |             |              |
| <b>Note 9 Capital Stock</b>                                                                  | The Company issued a total of 350,000 shares of no par value capital stock for \$35,000,000 cash in 1969.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |             |              |
| <b>Note 10 Change in Method of Accounting for Capital Grants</b>                             | <p>In 1967 and 1968 the Company included in earnings amounts claimed under the Industrial Research and Development Incentives Act of \$711,000 and \$550,000 respectively, on account of the acquisition of general purpose plant and equipment.</p> <p>In 1969 the Company changed its practice of accounting for these capital grants to follow the method recommended by the Canadian Institute of Chartered Accountants to deduct such grants from the fixed assets and to record depreciation on the net cost. The retained earnings as at 1 January 1968 and the earnings for the year ended 31 December 1968 have been restated to reflect this change.</p> |              |             |              |
| <b>Note 11 Plan for Employees' Pensions</b>                                                  | The latest actuarial valuation of the plan established an unfunded liability of \$13,004,000 at 31 December 1967. This amount and the interest thereon is being funded by twenty-three annual payments of \$538,000 and five annual payments of \$1,229,000, both of which commenced in 1968. Payments are charged against operations in the years in which they are made.                                                                                                                                                                                                                                                                                         |              |             |              |



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**Note 12 Long-Term Leases**

Material contractual obligations in respect of long-term leases amount to \$37,212,000 at 31 December 1969. Related rentals incurred for the year 1969 amounted to \$1,504,000 and the minimum amount applicable to the next five years is \$8,300,000.

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**Note 13 Microsystems International Ltd.  
Canadian Government Grants and Loan**

Under agreements dated 22 July 1969, the Government undertook to reimburse Microsystems International Ltd. for expenditures approved prior to 1 April 1973 in respect of the cost of specified equipment by means of a conditional grant not exceeding \$12,000,000 and an interest free loan not exceeding \$12,000,000, and also in respect of 50% of certain research and development expenses by means of conditional grants not exceeding \$23,950,000.

The conditional grants are repayable, without interest, from the cumulative earnings (after deduction of losses) before income taxes, in excess of 10% of the cumulative sales of all products except discrete components.

The loan is repayable in five equal consecutive annual instalments in respect of each equipment package, the first instalment to be paid one year after the date on which the particular equipment package is put to use.

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**Note 14 Microsystems International Ltd.  
Issue of Common Shares**

On 7 January 1970, Microsystems International Ltd. entered into an agreement with underwriters for the sale to them of 2,000,000 common shares without nominal or par value of its capital stock for the sum of \$20,000,000. The Company will retain majority ownership in Microsystems International Ltd.

On 7 January 1970, the Company undertook, subject to completion of the issue and sale of the 2,000,000 common shares referred to above, to subscribe and pay for, over the period ending 31 December 1973, an additional 1,950,000 common shares of Microsystems International Ltd. at a price of \$10 per share. To 31 December 1969, the Company advanced \$4,500,000 in respect of this undertaking.

Microsystems International Ltd. has agreed to issue to the Company, for delivery to its debentureholders, 430,000 warrants to purchase common shares of Microsystems International Ltd. at a price of \$13.50 per share for a period of nine years from the date of the public offering on the basis of ten common shares for each \$1,000 principal amount of debentures held. These warrants will be issued as consideration for amendments to the trust agreements to permit long-term borrowing by certain subsidiaries.

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**Auditors' Report**

The Shareholders,  
Northern Electric Company, Limited.

We have examined the consolidated balance sheet of Northern Electric Company, Limited and its subsidiaries as at 31 December 1969 and the consolidated statements of earnings, retained earnings and source and application of funds for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion these consolidated financial statements present fairly the consolidated financial position of the companies as at 31 December 1969 and the results of their operations and the source and application of their funds for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year after giving retroactive effect to the change described in Note 10 to the financial statements.

Montreal, Que.  
11 February 1970.

  
Chartered Accountants.



# Northern Electric Company, Limited

## Seven-Year Review

|                                              | 1969                  | 1968   | 1967   | 1966   | 1965   | 1964   | 1963   |
|----------------------------------------------|-----------------------|--------|--------|--------|--------|--------|--------|
|                                              | (millions of dollars) |        |        |        |        |        |        |
| Earnings and Related Data                    |                       |        |        |        |        |        |        |
| Total Sales .....                            | 482.5                 | 426.3  | 403.3  | 400.2  | 358.1  | 328.1  | 314.8  |
| Sales of Company Manufactured Products ..... | 390.7                 | 345.3  | 308.1  | 284.1  | 249.6  | 232.3  | 223.6  |
| Depreciation on Plant and Equipment .....    | 10.5                  | 9.9    | 8.6    | 7.9    | 6.4    | 7.4    | 8.0    |
| Interest Charges .....                       | 3.6                   | 2.7    | 2.7    | 2.7    | 1.9    | 1.8    | 1.9    |
| Provision for Income Taxes .....             | 9.8                   | 5.6    | —      | .7     | 2.3    | 8.8    | 8.0    |
| Net Earnings for the Year .....              | 11.0                  | 9.4    | 2.3    | 10.1   | 8.6    | 9.9    | 8.5    |
| Earnings per Share (Dollars) .....           | 6.75                  | 6.42   | 1.57   | 9.08   | 8.46   | 9.77   | 8.39   |
| Dividends per Share (Dollars) .....          | 6.50                  | 6.50   | 6.50   | 6.50   | 6.50   | 5.65   | 5.20   |
| Financial Position at 31 December            |                       |        |        |        |        |        |        |
| Working Capital .....                        | 147.6                 | 119.7  | 119.3  | 118.6  | 93.1   | 92.5   | 91.1   |
| Plant and Equipment (At Cost) .....          | 214.9                 | 194.5  | 184.6  | 167.2  | 146.3  | 132.4  | 120.9  |
| Accumulated Depreciation .....               | 115.5                 | 108.3  | 100.7  | 93.9   | 87.7   | 82.4   | 76.1   |
| Capital Expenditures .....                   | 24.2                  | 12.4   | 19.7   | 23.0   | 15.3   | 12.8   | 9.9    |
| Long-Term Debt .....                         | 41.0                  | 43.0   | 45.0   | 47.0   | 36.2   | 37.7   | 39.0   |
| Shareholders' Equity .....                   | 180.4                 | 145.0  | 140.8  | 128.6  | 100.8  | 95.4   | 91.3   |
| Employment Data                              |                       |        |        |        |        |        |        |
| Total Employment Costs .....                 | 205.1                 | 175.4  | 157.1  | 144.0  | 119.1  | 107.2  | 100.1  |
| Employees (31 December) .....                | 26,025                | 23,682 | 22,557 | 23,864 | 19,632 | 18,066 | 16,953 |

Note: The information shown above reflects the change in method of accounting for capital grants as set out in Note 10 of the Consolidated Financial Statements.

## Products manufactured

### Telephone Switching Systems

Electro-mechanical exchanges  
Electronic exchanges  
Long distance exchanges and switchboards  
Private branch exchanges (PBX)  
Private automatic branch exchanges (PABX)

### Transmission Systems

Microwave radio  
Satellite ground stations  
Parametric amplifiers  
Carrier multiplex and telegraph systems

### Telephone Sets

Residential telephone sets  
Public telephone sets  
Business telephone sets  
Key telephone sets and systems  
Business interphones

### Wires and Cables

Telecommunications wire and cables  
Power wire and cables

### Telecommunications Power Plants

24V, 48V and 130V power plants  
Ringing and tone plants

### Telecommunications Apparatus

A complete line of apparatus and components

## Manufacturing Centres

Halifax, Nova Scotia  
Saint John, New Brunswick  
Montreal, Quebec  
Montreal North, Quebec  
Town of Mount Royal, Quebec  
St. Laurent, Quebec  
Lachine, Quebec  
Ottawa, Ontario  
Belleville, Ontario  
Bramalea, Ontario  
Toronto, Ontario  
London, Ontario  
Winnipeg, Manitoba  
Calgary, Alberta

## Research and Development Laboratories

Ottawa, Ontario

## Regional Laboratories

Montreal, Quebec  
Lachine, Quebec  
Ottawa, Ontario  
Belleville, Ontario  
Bramalea, Ontario  
London, Ontario

## Subsidiary Companies

Microsystems International Ltd.  
Montreal, Canada  
  
Dominion Sound Equipments Limited  
Montreal, Canada  
  
Northern Electric Telekomünikasyon A.Ş.  
Umraniye (Istanbul), Republic of Turkey  
  
Industrial Corporation for Telecommunications  
Equipment S.A.  
Northern Electric Hellas, Athens, Greece  
  
Northern Electric Caribbean Limited  
Jamaica, W.I.

## Sales Offices and Warehouses

St. John's, Newfoundland  
Halifax, Nova Scotia  
Saint John, New Brunswick  
Moncton, New Brunswick  
Chicoutimi, Quebec  
Quebec, Quebec  
Trois-Rivières, Quebec  
Sherbrooke, Quebec  
Montreal North, Quebec  
Montreal, Quebec  
Ottawa, Ontario  
Kingston, Ontario  
Toronto, Ontario  
Hamilton, Ontario  
Kitchener, Ontario  
St. Catharines, Ontario  
London, Ontario  
Sarnia, Ontario  
Windsor, Ontario  
Kirkland Lake, Ontario  
Sudbury, Ontario  
Sault Ste. Marie, Ontario  
Thunder Bay, Ontario  
Winnipeg, Manitoba  
Regina, Saskatchewan  
Saskatoon, Saskatchewan  
Edmonton, Alberta  
Calgary, Alberta  
Vernon, British Columbia  
Dawson Creek, British Columbia  
Prince George, British Columbia  
Kamloops, British Columbia  
Kitimat, British Columbia  
Vancouver, British Columbia  
Victoria, British Columbia

## Represented in the following countries

Australia  
Bolivia  
Brazil  
Chile  
Colombia  
Costa Rica  
Cyprus  
Ethiopia  
El Salvador  
Greece  
Guatemala  
Honduras  
India  
Iran  
Iraq  
Kenya  
Kuwait  
Lebanon  
New Zealand  
Nicaragua  
Nigeria  
Singapore  
Syria  
Taiwan  
Thailand  
Tanzania  
Turkey  
Uganda  
United States of America  
Venezuela



## Glossary of terms

### Acoustic Devices

Devices that change sound waves into electrical waves and vice versa.

### Antenna

A device for radiating or receiving radio wave energy.

### Apparatus

The communications equipment or products which are found on customer premises rather than in telephone buildings.

### Automatic Tracking Mechanism

A device which keeps a ground station antenna pointed at the antenna of a moving satellite.

### Business Intercom

A combination of telephone service and intercom service using the same instrument.

### Centrex

As well as other features, Centrex service allows the telephone subscriber to dial directly into PBX extensions without going through the PBX operator.

### Coaxial Cable

A coaxial pair of conductors is one conductor in the form of a tube and the second conductor in the form of a wire running down the centre of this tube. A coaxial cable is the combining of several such coaxial pairs under one sheath.

### Crossbar System

A switching system using a particular kind of mechanical switch called a crossbar switch. Crossbar switching systems concentrate control of most of their action in a central part of the machine rather than diffusing control throughout.

### Digitone\* Telephone Set

A pushbutton telephone set by which the telephone number is sent forward to the network by depressing buttons instead of turning a rotary dial. There is a real advantage in its ability to send digital information forward after connection has been established.

### Electronic Switching System

Until recently, switching systems were electromechanical in design, i.e., connections were made by magnets moving pieces of metal together. The electronic switching system uses electronic devices to open and close circuits and with fantastic speed.

A more important feature of electronic switching is the controlling of the switching system by instructions and logic contained in computer like memories and recalled as required during the operation of the switching system. This is "stored program control".

### Frequency-Division Multiplex

A method of arranging the many voice frequency circuits, before inserting them onto a carrying medium, is to stack them up in frequency.

### Integrated Circuit

The term integrated circuit is essentially synonymous with microcircuit.

### Key Telephone Systems

A system using a telephone set on which more than one line terminates and allows the answering and use of more than one line of the telephone set.

### Microcircuits

Microcircuits contain dozens, and in some cases hundreds, of active semiconductor devices (transistors, diodes) and passive devices (resistors, capacitors) on one piece of pure silicon a few hundredths of an inch square.

### Microwave

The propagation of radio energy at extremely high frequencies (a few billion cycles per second) which transmits information from one point to another.

### Multiplex

The equipment used to group voice circuits on a microwave system or other transmission medium.

### Plug-In Line Circuit Cards

Small circuits using semiconductors are produced on small cards having electrical contacts on the edge. This circuit card may be plugged into a system.

### Private Automatic Branch Exchange (PABX)

A small switching system installed on the customer's premises which provides on site telephone switching requirements as well as outside connections.

### Radome

A covering which provides protection to antennas associated with radar against extreme weather conditions.

### Semiconductor

A semiconductor is a material which is neither a good conductor of electrical current nor an insulator. Devices (transistors, diodes) using these materials have replaced vacuum tubes. Semiconductors improve reliability and are much smaller and less costly.

### Switching

In a communications network, switching is the function of interconnecting any two telephones or stations.

### Tone Ringer

An electronic device which produces a tone to alert the telephone user, replacing the mechanical bell which now provides the telephone's ring.

### Transmission

In a communications system, transmission refers to the transmission of intelligence from one geographic location to another.

### Transponder

The electronic equipment in a satellite which receives the radio signal from the antenna system, amplifies and retransmits the enhanced signal into the antenna system for the return journey.

\*Trademark of Northern Electric Co. Ltd.











